

Scandium oxide films were prepared by electron beam evaporation. The effects of substrate temperature and oxygen partial pressure on the microstructure and optical properties of the films were investigated. Films deposited at 300 °C were crystalline, whereas those deposited on unheated substrates were essentially amorphous. Normal-incidence transmittance spectra of the films revealed that the films were optically inhomogeneous. A model based on an inhomogeneous layer was applied to extract the refractive index from the transmittance spectra. It was found that the refractive index increased with the substrate temperature and decreased with the introduction of oxygen.